

## THE STONE QUESTION.

ST. GEORGE'S ROMAN CATHOLIC CHURCH.

We have received a statement from Mr. Myers, the builder of St. George's Church, in respect of the premature decay of some part of the stonework there, with an urgent request that we should give publicity to it. It is to the effect, that although the stone used there externally is, for the most part, indeed with a very trifling exception wholly, Bath, as we stated, still that a small quantity of Caen stone was used with it (as, for example, the cornice and embattled parapet of the lower portion of the Chapel of the Sacrament, at the east end), and that it is this, and this alone, the Bath stone being at present sound, which is decaying. We have not been able yet to see for ourselves the truth of the statement, but give it as the assertion of the builder. Admitting it to be correct, it must of course not be taken as proving Bath stone good and Caen stone bad. It simply shews that these particular blocks of Caen stone were bad: and the quarry whence they came (the particular part of the quarry it should be, for in every quarry there is both bad and good), and other circumstances in connection with them, would be legitimate objects of inquiry.

We have inquiries and statements on the subject of stone from all quarters: every one seems at sea about it, and confidence is greatly shaken. So far as Caen stone is concerned, we have determined on an immediate personal examination of the quarries, with the view of afterwards testing some of the specimens of stone which we shall obtain, and giving, if possible, some sound information on the subject.\*

## HUTCHISON'S PATENT FOR THE INDURATION OF STONE.

In connection with the important subject, the preservation of stone, we have recently examined specimens of soft sandstone from the Calverley quarries, Tonbridge Wells, after being subjected to the indurating process practised by Mr. Hutchison under a patent, and the change effected in them is very striking. The effect of the process, according to the patentee, is not merely to indurate soft stone, but to render all kinds of stone, &c., impervious to atmospheric action, vermin, &c., which important qualities cannot be too highly estimated for hydraulic, paving, building, decorative, and monumental work. He professes to transform the Caen, Bath, and other stone, into materials invincible to destructive agents, to equal marble for beauty and durability, and says, for water pipes, reservoirs, cisterns, mangers, troughs, &c., neither iron nor other material can equal the indurated stone for cheapness and strength.

We need scarcely say that time is the great test for such an invention, but are bound to add that the specimens we have seen entitle the process to the considerate examination of those who are interested in the matter.

## THE GAS EXPLOSION IN REGENT'S PARK.

Dr. ARNOTT has addressed a long letter to the Times, of which we think it right to record the main facts.

A destructive accident of a new kind or degree, as he justly remarks, becomes often a very valuable lesson by attracting attention to a subject previously ill understood. The late gas explosion in Albany-street—the most disastrous, perhaps, which has taken place since gas lights have been used—appears to be an occurrence of this kind. Parties wished to make it appear that gas could not have been the explosive agent, but that gunpowder or gun-cotton must have been in the house. It was of consequence that no doubt should remain on this point.

Such is the relation of ordinary coal gas to atmospheric air, that if the lighted gas be allowed to issue uniformly and to mingle always with a sufficient proportion of fresh atmospheric air, it burns with a safe and steady flame, combining gradually with the oxygen of the air; but if, before being kindled, any considerable quantity of the gas be allowed to

issue and to mix completely with just ten times its volume of atmospheric air, on a light being then applied, the whole mixed mass kindles at once as a flash, like gunpowder, and dilates with violent explosive force. The strength of such explosion is shewn in coal mine accidents, where sometimes more than 100 men at one time have been destroyed, and horses have been thrown up from the shaft like bullets from a gun. It may be experimentally exhibited by filling a bag with the required proportions of gas and air, and then blowing soap bubbles from the bag, each of which, when set free and touched in its ascent by the flame of a candle, explodes like a pistol shot. The degree of the expansion of the air when thus fired, and which is caused by the sudden heat of the chemical action, is held to be at least tenfold; or such that 1 cubic foot, which weighs something more than an ounce, becomes for the time more than 10 feet, while an ounce of gunpowder during explosion is known to expand only to about three-fourths of 1 foot of gaseous matter. It is to be remarked, however, that gunpowder shews its prodigious force, not when allowed to explode in a wide or open space, but when confined to the bottom of a gun-barrel.

Gunpowder, too, consists of fixed proportions of nitre, charcoal, and sulphur, intimately blended: all the things necessary to the explosion are present in the powder itself, waiting only the spark which is to inflame them; and the smallest spark can inflame the largest magazine. But far different is the case of coal gas considered as an explosive agent. The gas itself, like the charcoal of gunpowder, is only one of the elements of a fulminating mass, and can no more explode alone than the contents of a coal cellar can. Before it can burn at all, every particle or measure of it must find somewhere, and mix perfectly with, two particles or measures of oxygen gas. A lighted taper plunged into mere coal gas, instead of exploding the gas, is itself instantly extinguished by it.

The series of faults committed to bring about the Albany-street explosion was extraordinary indeed.

1. The gas meter with its pipes and cock—a delicate apparatus, likely to be damaged by a rough touch—was placed in an enclosed dark space under the window shelf, which was made to serve also as the receptacle for the numerous heavy window shutters pushed in and dragged out every morning and evening.

2. It was not a careful person of the shop who managed the window shutters, but a thoughtless boy, who came night and morning for that purpose alone.

3. It had been often observed that gas was escaping, and examinations and repairs about the meter were frequent; yet the hazardous arrangement remained unchanged.

4. When at last, on the night of the catastrophe, the boy, as was to be expected, struck the meter forcibly with a shutter, he had in reality left a leak at the meter, apparently by breaking the main cock and pipe, which in one hour and twenty minutes filled with explosive mixture the shop, where shortly before the three lamps had been burning in safety.

5. Smell of gas was felt almost immediately near the shop door, and before long at the top of the stairs. Mr. Loten, taking a candle in his hand, went towards the shop to examine it.

6. The shop, with so many lights in it, had no fire-place to favour ventilation, and the doors had been edged with leather to make them close. Then the complete mixture of escaping gas with the air of the shop was brought about by the fact that the gas did not escape from the burners high up, but entered the shop low down, and through the chinks of the shutter-box.

From what has now been said, it will appear that the means of safety for persons using gas in their houses are—

1. To have the apparatus made and fixed by competent workmen.

2. If any leak be perceived by the smell, to have it promptly attended to, and to open doors or windows to prevent accumulation.

3. On no account to carry a lighted candle to where there is a strong smell of gas.

4. To have the room or rooms in which gas is burnt ventilated from near the ceiling. The balanced chimney valve, which I proposed some years ago as a means of maintaining a healthy state of inhabited rooms generally, and which, having been mentioned in a clause added to the Metropolitan Buildings Act expressly to direct the mode of fixing it, is already extensively used, would, I believe, make it almost impossible for a dangerous accumulation to take place, even if the burner cocks were purposely

left open; and wherever gas is used in so inhabited place, this valve is not more important as a security against explosion than it is to guard inmates against the deleterious effect of breathing the burnt air of common gas illumination or of any other. There is no patent right for the valve, and an adroit workman any where may make it.

With these precautions, gas is, in a majority of cases, not only the most beautiful, convenient, and cheap means of lighting, but, as shewn by past experience, rendered still more assuring by the explanations of scientific men, is also on the whole the safest; and gas may therefore be regarded as one of the precious boons which advancing science has bestowed of late on the human kind.

The learned doctor omitted to add that the gas companies themselves have been the main hindrance to its much more extended and economical use in England.

## BILL OF A BUILDER-ARCHITECT

SOME time ago we referred to the state of St. Mary's Church, Bridgewater, and urged the parishioners to do such repairs as were necessary, under proper advice. A Mr. Hutchings, a "builder and architect," was employed on the part of the parish; tenders were advertised for and three received, which ought to have placed one of the parties tendering in our list of "blind builders," unless, indeed, he saw further than honest men. They were as follows:—Stuckham, 25*l.* 11*s.*; Tottle, 19*l.*; Hurford, 16*l.* The lowest tender was taken, and a contract was entered into. The work was done, and Mr. Hutchings's bill was sent in; and here it is,—a pretty specimen, as most of our readers will admit:—

The churchwardens of St. Mary's Church to T. Hutchings—

1846.—Oct. 10. My attendance to surveying, directing the taking off the mortar, and certifying for same . . . . . £3 0 0

Man one day preparing and making mortar for pointing, for specimen, 3*s.*: lime, 2*s.* 6*d.*; sand, 2*s.* 6*d.* . . . . . 0 8 0

Oct. 17. Three men and labourer six days to pointing on north side of tower for specimen . . . . . 4 16 0

Man half-day ditto, 1*s.* 9*d.*; paid for water, 2*s.* . . . . . 0 3 9

Myself attending to ditto . . . . . 1 10 0

Loan of scaffolding . . . . . 0 15 0

Stone for repairing quoins, and for walls . . . . . 0 12 6

Quarter cwt. hair for mortar . . . . . 0 2 6

Oct. 21. Man and labourer three days cutting out and fixing base . . . . . 0 18 0

Man ditto four and half days, 13*s.* 6*d.*; eight barrows mortar, 6*s.* . . . . . 0 19 6

Man one and half ditto . . . . . 0 6 0

Fifty-eight feet of base to north side of tower, at 1*s.* 8*d.* . . . . . 4 15 8

Oct. 31. Man and labourer one and quarter day fixing ditto . . . . . 0 7 6

Man ditto two and half days . . . . . 0 7 6

Nov. 7. Specifications and instruction for advertising and letting the work

1847.—March 26. My attendance daily for twenty weeks, surveying the progress and directing of the different works, under the specification, at 3*s.* per work . . . . . 30 0 0

£37 12 11

Pretty well this, for superintending work in the amount of 165*l.*

The churchwardens paid the account, but the parishioners are not well disposed towards re-imbursing them the amount of this amusing charge, and thereupon issue is joined.

The *Bridgewater Times* says:—"No architect, no regularly-bred man, would for a moment have thought of sending such a bill to any public body. The nature of the work to be executed being of the simplest character, comprising the removal of the stucco and pointing, and making good the walls of the church, the usual professional fee or percentage would have satisfied a regularly qualified practitioner. Mr. Hutchings, however, valuing his services at a much higher rate than any architect would charge for his advice and survey, sends in to the parish a bill amounting to the above enormous sum, which, by a most unfortunate oversight, or culpable neglect, is paid to him by the person who is employed to collect the rates." The gist of the matter, however, is in round:—"It is rumored—in-

\* We shall be happy to receive the results of personal experience of stone from any of our readers, especially from practical men.